QC ABSTRACT

NAME OF WORK: Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Block(400*150*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	Precast (250mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1

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8	PCC(M15)	Compressive Strength(7days and 28days)	4 set /31-50 cum	32.19	8	8
9	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
10	BM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
11	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
12	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
13	TACK COAT	Rate of spread	One Test		1	1
14	Mortar Sand	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		Compacted Bulk Density	One Test		1	1
		Loose Bulk Density	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2022-07-12-25** **Date: 18-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-06-2022

Sample Type : Birla Super 53grade

Reference to BIS codes :
IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 (RA 2021) DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, (RA 2018) Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, (RA 2019) Determination of Soundness, Clause 5, Clause 6
IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, (RA 2019) Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11, (RA 2019)DETERMINATION OF DENSITY , Clause 6

Date of test : 16-06-2022

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.08	–
2	Finess by Air permeablity method (m^2/kg,Min)	298.5	225m^2/kg, Min
3	Density (gm/cc)	3.14	–
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	275 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Authorized Signatory
Technical Manager

Assistant Executive Engineer
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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2022-07-12-25** **Date: 14-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-2022
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, (RA 2019) Determination of Compressive Strength, Clause 6
Date of test	:	16-06-2022
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	57.5N/mm^2	Not less than 53 N/mm^2

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Technical Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-07-12-25** **Date: 18-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	15-06-2022
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	15-06-2022

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	189	189	1.3	98.7	90-100
3	20 mm	7284	7473	49.8	50.2	30-70
4	10 mm	4089	11562	77.1	22.9	10-35
5	*4.75 mm*	*3001*	*14563*	*97.1*	*2.9*	*0-5*
6	Pan	437	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-07-12-25** **Date: 18-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.5	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.8	
3	Specific Gravity	2.66	_
4	Bulk Density(Loose) (Kg/l)	1.42	_
5	Bulk Density(Compacted) (Kg/l)	1.48	_
6	Water Absorption(%)	0.21	_

* The results obtained are satisfactory as per standard requirements.

Note:

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-07-12-25** **Date: 17-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-2022
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	15-06-2022

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	199	199	4.0	96.0	90-100
3	10 mm	3050	3249	65.0	35.0	25-55
4	4.75 mm	1502	4751	95.0	5.0	0-10
5	Pan	249	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-07-12-25** **Date: 17-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.7	
3	Specific Gravity	2.62	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.55	_
6	Water Absorption(%)	0.27	_
7	Aggregate crushing Value(%)	23.9	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.1	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-07-12-25** **Date: 17-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-06-2022

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2021
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 15-06-2022

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	12	12	1.2	98.8	90-100	90-100	90-100	95-100
3	2.36 mm	165	177	17.7	82.3	60-95	75-100	85-100	95-100
4	1.18 mm	227	404	40.4	59.6	30-70	55-90	75-100	90-100
5	600 micron	109	513	51.3	48.7	15-34	35-59	60-79	80-100
6	300 micron	288	801	80.1	19.9	5-20	8-30	12-40	15-50
7	150 micron	142	943	94.3	5.7	0-10	0-10	0-10	0-15
8	Pan	57	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-07-12-25** **Date: 17-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.87	–
2	Specific Gravity	2.54	–
3	Material finer than 75 micron(%)	4.8	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

Note:

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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2022-07-12-25** **Date: 24-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-06-2022

Sample Type /Size : Precast Cover Slab (100 mm Thick)

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete

Date of test : 20/06/2022

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.65	100.56	1.125	4494	83.5	18.6	17.3	21.6
2	Cover Slab-2	75.48	100.96	1.136	4474	85.5	19.1	17.8	22.2
3	Cover Slab-3	75.74	100.81	1.145	4505	82.4	18.3	17.0	21.3

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Note:

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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2022-07-12-25** **Date: 24-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-06-2022

Sample Type /Size : Precast Cover Slab (250 mm Thick)

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete

Date of test : 20/06/2022

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	200.35	250.63	3.126	31520	720.5	22.9	21.3	26.6
2	Cover Slab-2	200.45	250.72	3.145	31552	750.5	23.8	22.1	27.7
3	Cover Slab-3	200.95	250.85	3.162	31709	775.5	24.5	22.7	28.4

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Assistant Executive Engineer
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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 29/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 29/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	22/06/2022	29/06/2022	151.10 X 150.57 X 149.92	22752	8.354	288.8	12.7	12.5
2	PCC	M15	22/06/2022	29/06/2022	150.70 X 149.31 X 151.17	22500	8.294	284.0	12.6	
3	PCC	M15	22/06/2022	29/06/2022	151.57 X 151.44 X 151.00	22955	9.013	276.8	12.1	

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Note:

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Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore

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Authorized Signatory
Technical Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 20/07/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 20/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	22/06/2022	20/07/2022	150.60 X 151.84 X 150.67	22867	8.828	400.9	17.5	17.5
2	PCC	M15	22/06/2022	20/07/2022	151.82 X 151.47 X 151.65	22996	8.663	393.7	17.1	
3	PCC	M15	22/06/2022	20/07/2022	151.26 X 149.96 X 151.16	22682	8.850	402.3	17.7	

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Technical Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 29/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 29/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	22/06/2022	29/06/2022	151.83 X 149.20 X 151.43	22653	9.017	288.2	12.7	12.7
2	PCC	M15	22/06/2022	29/06/2022	149.98 X 149.33 X 150.95	22396	8.256	280.5	12.5	
3	PCC	M15	22/06/2022	29/06/2022	149.37 X 151.07 X 151.74	22565	9.032	287.9	12.8	

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B.B.M.P, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 20/07/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 20/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	22/06/2022	20/07/2022	151.74 X 150.97 X 149.34	22909	8.876	396.7	17.3	17.6
2	PCC	M15	22/06/2022	20/07/2022	149.30 X 151.29 X 151.75	22588	8.458	401.7	17.8	
3	PCC	M15	22/06/2022	20/07/2022	151.67 X 151.01 X 149.39	22904	9.003	407.3	17.8	

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R RUDRAPRASAD
Authorized Signatory
Technical Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 30/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	30/06/2022	149.93 X 150.73 X 151.09	22598	8.401	293.4	13.0	12.6
2	PCC	M15	23/06/2022	30/06/2022	149.75 X 150.72 X 151.25	22570	8.756	273.2	12.1	
3	PCC	M15	23/06/2022	30/06/2022	150.14 X 150.67 X 149.04	22620	8.534	289.0	12.8	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 21/07/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	21/07/2022	151.10 X 150.08 X 151.51	22678	8.260	397.9	17.5	17.6
2	PCC	M15	23/06/2022	21/07/2022	150.00 X 149.43 X 149.25	22416	8.331	391.8	17.5	
3	PCC	M15	23/06/2022	21/07/2022	149.37 X 150.06 X 149.40	22415	8.463	397.8	17.7	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 30/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	30/06/2022	149.78 X 151.90 X 149.18	22751	8.665	289.9	12.7	12.8
2	PCC	M15	23/06/2022	30/06/2022	151.31 X 151.51 X 151.95	22925	8.644	290.7	12.7	
3	PCC	M15	23/06/2022	30/06/2022	150.22 X 150.87 X 151.69	22665	8.984	292.7	12.9	

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Vidyaranyapura Sub Division
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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-25** **Date: 21/07/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	21/07/2022	149.08 X 149.31 X 150.69	22259	9.007	395.0	17.7	17.4
2	PCC	M15	23/06/2022	21/07/2022	150.72 X 150.89 X 150.76	22741	8.980	397.4	17.5	
3	PCC	M15	23/06/2022	21/07/2022	149.37 X 149.03 X 149.02	22260	8.494	379.5	17.0	

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Assistant Executive Engineer
Vidyaranyapura Sub Division
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Format No: CP/TF/2017

TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2022-07-12-25** **Date: 23-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-06-2022

Sample Type : Fine Aggregate, M.Sand for Mortar

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2116-1980 (RA-2007) (Specification for Sand for Masonry Mortars)
IS: 2386 :1963(Part - 1, 3) RA2021
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 20-06-2022

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 2116-1980 (RA-2007)
1	4.75 mm	0	0	0	100	100
2	2.36 mm	75	75	7.5	92.5	90-100
3	1.18 mm	150	225	22.5	77.5	70-100
4	600 micron	125	350	35.0	65.0	40-100
5	300 micron	113.5	463.5	46.4	53.7	5-70
6	150 micron	420.5	884	88.4	11.6	0-15
7	Pan	116	1000	100.0	0.0	0

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Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

CIVIL Pro Sig..... Date..... BANGALORE

TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2022-07-12-25** **Date: 23-06-2022**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	3.16	_
2	Specific Gravity	2.54	_
3	Material finer than 75 micron(%)	12.4	Crushed Fine aggregate Max 15%
4	Compacted Bulk Density (Kg/litre)	1.80	_
5	Loose Bulk Density (Kg/litre)	1.72	_

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Authorized Signatory
Technical Manager

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Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Format No: CP/TF/01

TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2022-07-12-25** **Date: 24-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-06-2022
Sample Type/Size	:	Solid concrete blocks size (400X150X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2020) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	20-06-2022

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	400	151	202	12201	21.856	1791.4	1782.5	Not less than 1800Kg/m^3
2	403	152	202	12374	21.746	1757.5		
3	403	153	199	12270	22.069	1798.6		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	24.91	23.83	4.35	3.98	Shall not be more than 10% by mass
2	25.57	24.55	4.01		
3	24.44	23.57	3.58		

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Lab ID : **CP-2022-07-12-25** **Date: 24-06-2022**

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	402	149	203	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	402	151	205	
3	403	153	203	
4	402	151	205	
5	401	150	210	
6	404	150	202	
7	402	151	200	
8	403	151	200	
9	403	149	208	
10	403	151	205	
11	403	153	200	
12	404	152	202	
13	405	153	204	
14	403	153	202	
15	404	149	205	
16	405	153	210	
17	403	150	206	
18	402	152	210	
19	403	152	209	
20	401	153	200	
Average of 20	**403**	**151**	**204**	

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Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Lab ID : **CP-2022-07-12-25** **Date: 24-06-2022**

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	400	149	59686	240.1	4.0	4.2
2	402	151	60491	262.1	4.3	
3	403	153	61496	239.6	3.9	
4	402	151	60555	263.8	4.4	
5	401	150	60169	267.9	4.5	
6	404	150	60679	243.6	4.0	
7	402	151	60861	267.5	4.4	
8	403	151	61015	249.8	4.1	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	**Minimum average**	**Minimum Individual units.**
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

* The Results Obtained are Satisfactory as per Standard Requirements

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Vidyaranyapura Sub Division
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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2022-07-12-25** **Date: 27-06-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-06-2022

Type of Mix : WMM (Wet Mix Macadam)

Date of Test : 25-06-2022

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	342	342	3.1	96.9	95-100
22.4	2188	2530	23.0	77.0	60-80
11.2	2085	4615	42.0	58.0	40-60
4.75	2388	7003	63.7	36.3	25-40
2.36	1785	8788	79.9	20.1	15-30
0.6	638	9426	85.7	14.3	8-22
0.075	1201	10627	96.6	3.4	0-5

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 27-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-06-2022
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	25-06-2022

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301.5	301.5
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	70.2	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	231.0	227.1
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.4
5	Aggregate impact value	(B/A)*100	23.3	24.5
6	Aggregate impact value (Mean of two tests)	Pecentage	23.9	

* The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 27-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-06-2022
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	25-06-2022

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	13.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.1%	
Combined Flakiness and Elongation Index for WMM	25.9%	

* The results obtained are satisfactory as per standard requirements.

Note:-

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Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 29-06-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	27-06-2022
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)
Date of Test	:	27-06-2022

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**66**	60 to 70
2	Softening Point, °C	**48.6**	Min. 40°C
3	Ductility, cm	**95**	Min. 75cm
4	Flash point, °C	**235**	Min. 220°C
	Fire point, °C	**260**	

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2022-07-12-25**	**Date: 01-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division	
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094	
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	29-06-2022	
Type of Mix	:	BM-Plant (Bituminous Macadam)	
Date of Test	:	29-06-2022	
Weight of Sample(gm)	:	5000	

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	450	450	9.0	91.0	90-100
13.2	1150	1600	32.0	68.0	56-88
4.75	2450	4050	81.0	19.0	16-36
2.36	350	4400	88.0	12.0	4-19
0.3	300	4700	94.0	6.0	2-10
0.075	0	4700	94.0	6.0	0-8
PAN	300	5000	100.0	0.0	0

* The results obtained are satisfactory as per standard requirements.

Note:-
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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID	:	**CP-RW-2022-07-12-25**	**Date: 01-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division	
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094	
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	29-06-2022	
Type of Mix	:	BM (Bituminous Macadam)	
Date of Test	:	29-06-2022	

Table 500-6 : Physical Requirements fo Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	8.6	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	13.6		
Strength	Aggregate Impact Value	20.5	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.6	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.4	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 01-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-06-2022
Type of Mix	:	BM(Bitumnous Macadam)
Date of Test	:	29-06-2022
Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	97.8	3.4	97.5	Minimum Retained Coating 95%
2	96.0	1.8		
3	98.8	4.0		

* The results obtained are satisfactory as per standard requirements.

Note:-
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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 01-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	29-06-2022
Type of Mix	:	BM (Bituminous Mecadam)
Date of Test	:	29-06-2022

The results of the tests conducted on the Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	15.18	14.95	9KN(Min)
2	Marshal flow at 60°C, mm	2.88	2.83	2-4
3	Percent air Voids	3.06	3.27	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.07	13.99	13-15
5	Percent Voids filled with Bitumen(VFB %)	75.14	71.89	65-75
6	Density, g/cc	2.40	2.41	–

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2022-07-12-25** **Date: 06-07-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 04-07-2022

Type of Mix : BC-Plant (Bituminous Concrete)

Date of Test : 04-07-2022

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	91	91	1.8	98.2	90-100
9.5	585	676	13.5	86.5	70-88
4.75	948	1624	32.5	67.5	53-71
2.36	488	2112	42.2	57.8	42-58
1.18	744	2856	57.1	42.9	34-48
0.6	789	3645	72.9	27.1	26-38
0.3	298	3943	78.9	21.1	18-28
0.15	348	4291	85.8	14.2	12-20
0.075	314	4605	92.1	7.9	4-10
PAN	395	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 07-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-07-2022
Type of Mix	:	BC(Bitumenous Concrete)
Date of Test	:	04-07-2022

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	97.5	2.5	97.5	Minimum Retained Coating 95%
2	98.0	2.0		
3	97.0	3.0		

* The results obtained are satisfactory as per standard requirements.

Note:-
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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 07-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-07-2022
Type of Mix	:	BC (Bituminous Concrete)
Date of Test	:	04-07-2022

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	14.2	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	10.8		
Strength	Aggregate Impact Value	20.8	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.55	Maximum 2.7	IS:2386 Part III

The results obtained are satisfactory as per standard requirements.

te:-

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2022-07-12-25** **Date: 07-07-2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/26/2022-23
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	04-07-2022
Type of Mix	:	BC (Bituminous Concrete)
Date of Test	:	04-07-2022

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.47	11.28	10KN(min)
2	Marshal flow at 60°C, mm	3.51	3.59	2-4
3	Percent air Voids	4.75	4.69	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.47	14.55	13-15
5	Percent Voids filled with Bitumen(VFB %)	72.56	71.43	65-75
6	Density, g/cc	2.26	2.27	–

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2022-07-12-25** **Date: 11-07-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Date of Receipt : 09-07-2022

Type of Mix : BM (Bituminous Macadam)

Date of Test : 09-07-2022

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	482	483
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	3.6	3.40
4	Average percentage	%	3.50	

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Lab ID : **CP-RW-2022-07-12-25** **Date: 11-07-2022**

AFTER EXTRACTION(Trail-1)

Weight of Sample : 482 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	38	38	7.9	92.1	90-100
13.2	147	185	38.4	61.6	56-88
4.75	191	376	78.0	22.0	16-36
2.36	28	404	83.8	16.2	4-19
0.3	32	436	90.5	9.5	2-10
0.075	31	467	96.9	3.1	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 483 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	38	38	7.9	92.1	90-100
13.2	147	185	38.3	61.7	56-88
4.75	191	376	77.8	22.2	16-36
2.36	28	404	83.6	16.4	4-19
0.3	28	432	89.4	10.6	2-10
0.075	30	462	95.7	4.3	0-8

* The results obtained are satisfactory as per standard requirements.

Note:-

The results pertain to the samples received and tested.
All information Furnished by Customer/ Representative
Any correction in the report will make this report invalid.
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Samples will be disposed after 30 days from the date of issue of test certificate

CIVIL Pro Sig... Date... BANGALORE

FOR CIVIL Pro.
R RUDRAPRASAD
Authorized Signatory
Technical Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

End of Report

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2022-07-12-25** **Date: 12-07-2022**
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/26/2022-23
Sample Condition : Satisfactory
Date of Receipt : 11-07-2022
Type of Mix : Tack coat
Date of Test : 11-07-2022

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

Note:-
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Authorized Signatory
Technical Manager

End of Report

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : **CP-RW-2022-07-12-25** **Date: 12-07-2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Virupakshpura, Maramma Temple in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri. Subba Reddy K V, No:106/B Aswatha, Narayana RMV, 2nd Stage Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/26/2022-23

Source of Sample : Sample supplied by Agency

Date of Receipt : 11-07-2022

Type of Mix : BC (Bituminous Concrete)

Date of Test : 11-07-2022

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	468	467
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	6.40	6.60
4	Average percentage	%	6.5	

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R RUDRAPRASAD
Authorized Signatory
Technical Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

Lab ID : CP-RW-2022-07-12-25 **Date: 12-07-2022**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 468

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	17	17	3.6	96.4	90-100
9.5	58	75	16.0	84.0	70-88
4.75	98	173	37.0	63.0	53-71
2.36	86	259	55.3	44.7	42-58
1.18	42	301	64.3	35.7	34-48
0.6	38	339	72.4	27.6	26-38
0.3	28	367	78.4	21.6	18-28
0.15	23	390	83.3	16.7	12-20
0.075	32	422	90.2	9.8	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 467

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	21	21	4.5	95.5	90-100
9.5	59	80	17.1	82.9	70-88
4.75	95	175	37.5	62.5	53-71
2.36	85	260	55.7	44.3	42-58
1.18	40	300	64.2	35.8	34-48
0.6	35	335	71.7	28.3	26-38
0.3	31	366	78.4	21.6	18-28
0.15	24	390	83.5	16.5	12-20
0.075	32	422	90.4	9.6	4-10

* The results obtained are satisfactory as per standard requirements.

Note:-

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